

WHAT IS CLAIMED IS:

1. A video conference and video telephone system which includes transmission and reception apparatuses for performing communication of two audio signals of L  
5 and R channels, wherein

said transmission apparatus comprises

transmission means for transmitting data obtained by addition of the two audio signals as first audio data through a first communication channel, and  
10 transmitting data obtained by subtraction of the two audio signals as second audio data through a second communication channel, and

said reception apparatus comprises

reception means for receiving the data  
15 obtained by the addition of the two audio signals as the first audio data and the data obtained by the subtraction of the two audio signals as the second audio data, and

restoring means for restoring the audio  
20 signal by performing an arithmetic operation on the basis of the audio data received by said reception means.

2. A system according to Claim 1, wherein

25 the first audio data represents monaural audio and the second audio data represents stereo audio,

said transmission means of said transmission

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apparatus transmits, according to whether an audio source of said transmission apparatus is the stereo audio or the monaural audio, a change of the audio source to said reception apparatus, and

5           said restoring means of said reception apparatus restores the audio signal on the basis of the first audio data obtained by the addition of the two audio signals and the second audio data obtained by the subtraction of the two audio signals when the audio  
10           source of said transmission apparatus is the stereo audio, and restores the audio signal on the basis of only the first audio data obtained by the addition of the two audio signals when the audio source of said transmission apparatus is the monaural audio.

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3. A system according to Claim 1, wherein said transmission means of said transmission apparatus transmits the number of audio channels of said transmission apparatus to said reception apparatus, as  
20           describing it at a source description of an RTCP (real time control protocol) packet.

4. A system according to Claim 1, wherein said transmission means of said transmission apparatus  
25           transmits a type of audio input device of said transmission apparatus to said reception apparatus, as describing it at a source description of an RTCP

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packet.

5. A system according to Claim 1, wherein each of  
said transmission apparatus and said reception  
5 apparatus has notification means for notifying its own  
capability by using a mode request message according to  
H.245 Standard of ITU-T  
(International Telecommunication Union  
Telecommunication standardization sector)  
10 recommendation.

6. A system according to Claim 1, wherein  
said transmission means of said transmission  
apparatus adjusts the number of channels to be used for  
15 the transmission, according to the kind of audio source  
of said transmission apparatus, and

said reception means of said reception apparatus  
adjusts the number of channels to be used for the  
reception, according to the number of channels to be  
20 used for the transmission.

7. A transmission apparatus comprising:  
first generation means for generating packet data  
obtained by addition of two audio signals of L and R  
25 channels;

second generation means for generating packet data  
obtained by subtraction of the two audio signals; and

09870910-053101

transmission means for transmitting the packet  
data generated by said first generation means through a  
first communication channel, and transmitting the  
packet data generated by said second generation means  
5 through a second communication channel.

8. A reception apparatus comprising:

reception means for receiving packet data obtained  
by addition of two audio signals of L and R channels  
10 and/or packet data obtained by subtraction of the two  
audio signals; and

restoring means for restoring the audio signal by  
performing an arithmetic operation on the basis of the  
packet data received by said reception means.

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9. An apparatus according to Claim 8, wherein  
said restoring means restores a stereo audio signal on  
the basis of the packet data obtained by the addition  
of the two audio signals and the packet data obtained  
20 by the subtraction of the two audio signals when stereo  
audio is restored, and restores a monaural audio signal  
on the basis of only the packet data obtained by the  
addition of the two audio signals when monaural audio  
is restored.

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10. A communication apparatus comprising:

transmission means for transmitting packet data

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obtained by addition of two audio signals of L and R channels through a first communication channel, and transmitting packet data obtained by subtraction of the two audio signals through a second communication  
5 channel;

reception means for receiving the packet data obtained by the addition of the two audio signals of the L and R channels and/or the packet data obtained by the subtraction of the two audio signals; and

10 restoring means for restoring the audio signal by performing an arithmetic operation on the basis of the packet data received by said reception means.

11. An apparatus according to Claim 10, wherein  
15 said restoring means restores a stereo audio signal on the basis of the packet data obtained by the addition of the two audio signals and the packet data obtained by the subtraction of the two audio signals when stereo audio is restored, and restores a monaural audio signal  
20 on the basis of only the packet data obtained by the addition of the two audio signals when monaural audio is restored.

12. A communication method comprising:  
25 a first generation step of generating packet data obtained by addition of two audio signals of L and R channels;

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a second generation step of generating packet data obtained by subtraction of the two audio signals; and

a transmission step of transmitting the packet data generated in said first generation step through a first communication channel, and transmitting the packet data generated in said second generation step through a second communication channel.

13. A communication method comprising:

(a) a step of receiving packet data obtained by addition of two audio signals of L and R channels and/or packet data obtained by subtraction of the two audio signals; and

(b) a step of restoring the audio signal by performing an arithmetic operation on the basis of the packet data received in said reception step (a).

14. A communication method comprising:

(a) a step of transmitting packet data obtained by addition of two audio signals of L and R channels through a first communication channel, and transmitting packet data obtained by subtraction of the two audio signals through a second communication channel;

(b) a step of receiving the packet data obtained by the addition of the two audio signals of the L and R channels and/or the packet data obtained by the subtraction of the two audio signals; and

5           15. A recording medium which stores a program to  
cause a computer to execute following procedures:

10           the second generation procedure of generating  
packet data obtained by subtraction of the two audio  
signals; and

20           16. A recording medium which stores a program to  
cause a computer to execute following procedures:

(b) the procedure of restoring the audio signal by performing an arithmetic operation on the basis of the

17. A recording medium which stores a program to cause a computer to execute following procedures:

(b) the procedure of receiving the packet data obtained by the addition of the two audio signals of the L and R channels and/or the packet data obtained by the subtraction of the two audio signals; and

18. An image communication system which is  
20 composed of transmission and reception apparatuses  
performing communication of two audio signals of L and  
R channels, wherein

said transmission apparatus comprises

reception means for receiving, from an

25 external apparatus, the two audio signals of the L and

R channels and a monaural audio signal,

transmission means for transmitting data



obtained by addition of the received two audio signals  
and monaural audio signal as first audio data through a  
first communication channel, and transmitting data  
obtained by subtraction of the two audio signals as  
5 second audio data through a second communication  
channel, and

said reception apparatus comprises

reception means for receiving the data  
obtained by the addition of the two audio signals and  
10 monaural audio signal as the first audio data and the  
data obtained by the subtraction of the two audio  
signals as the second audio data, and

restoring means for restoring a stereo audio  
signal on the basis of the first and second audio data  
15 received by said reception means.

19. A communication apparatus which performs  
communication with plural external apparatuses,  
comprising:

20 reception means for receiving, from the external  
apparatus, two audio signals of L and R channels or a  
monaural audio signal;

generation means for generating first audio data  
by addition of the received two audio signals and  
25 monaural audio signal and second audio data by  
subtraction of the two audio signals; and

transmission means for transmitting the first and

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second audio data.

20. An apparatus according to Claim 19, wherein  
said transmission means transmits the first audio data  
5 through a first communication channel and the second  
audio data through a second communication channel.

21. An apparatus according to Claim 19, wherein  
when the external apparatus at a transmission  
10 destination of said transmission means corresponds to  
stereo audio, said transmission means transmits the  
first and second audio data to said transmission  
destination, and

when the external apparatus at the transmission  
15 destination of said transmission means corresponds to  
monaural audio, said transmission means transmits the  
first audio data to said transmission destination  
without transmitting the second audio data.

22. An apparatus according to Claim 19, further  
20 comprising image data communication means for  
transmitting and receiving image data.

23. A communication method for an image  
25 communication system which is composed of transmission  
and reception apparatuses performing communication of  
two audio signals of L and R channels, wherein

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in the transmission apparatus, said method comprises

a reception step of receiving, from an external apparatus, the two audio signals of the L and R channels and a monaural audio signal, and

a transmission step of transmitting data obtained by addition of the received two audio signals and monaural audio signal as first audio data through a first communication channel, and transmitting data obtained by subtraction of the two audio signals as second audio data through a second communication channel, and

in the reception apparatus, said method further comprises

a reception step of receiving the data obtained by the addition of the two audio signals and monaural audio signal as the first audio data and the data obtained by the subtraction of the two audio signals as the second audio data, and

a restoring step of restoring a stereo audio signal on the basis of the first and second audio data received in said reception step.

24. A communication method for a communication apparatus which performs communication with plural external apparatuses, comprising:

a reception step of receiving, from the external

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apparatus, two audio signals of L and R channels or a monaural audio signal;

a generation step of generating first audio data by addition of the received two audio signals and monaural audio signal and second audio data by subtraction of the two audio signals; and

a transmission step of transmitting the first and second audio data.

25. A method according to Claim 24, wherein said transmission step transmits the first audio data through a first communication channel and the second audio data through a second communication channel.

26. A method according to Claim 24, wherein when the external apparatus at a transmission destination in said transmission step corresponds to stereo audio, said transmission step transmits the first and second audio data to said transmission destination, and

when the external apparatus at the transmission destination in said transmission step corresponds to monaural audio, said transmission step transmits the first audio data to said transmission destination without transmitting the second audio data.

27. A method according to Claim 24, further

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comprising an image data communication step of transmitting and receiving image data.

28. A program which causes a computer to achieve  
5 a communication method comprising:

a first generation step of generating packet data obtained by addition of two audio signals of L and R channels;

10 a second generation step of generating packet data obtained by subtraction of the two audio signals; and

a transmission step of transmitting the packet data generated in said first generation step through a first communication channel, and transmitting the packet data generated in said second generation step  
15 through a second communication channel.

29. A program which causes a computer to achieve a communication method for an image communication system which is composed of transmission and reception  
20 apparatuses performing communication of two audio signals of L and R channels, wherein

in the transmission apparatus, said method comprises

25 a reception step of receiving, from an external apparatus, the two audio signals of the L and R channels and a monaural audio signal, and

a transmission step of transmitting data

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obtained by addition of the received two audio signals  
and monaural audio signal as first audio data through a  
first communication channel, and transmitting data  
obtained by subtraction of the two audio signals as  
5 second audio data through a second communication  
channel, and

in the reception apparatus, said method further  
comprises

10 a reception step of receiving the data  
obtained by the addition of the two audio signals and  
monaural audio signal as the first audio data and the  
data obtained by the subtraction of the two audio  
signals as the second audio data, and

15 a restoring step of restoring a stereo audio  
signal on the basis of the first and second audio data  
received in said reception step.

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